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1987

Montana. Public  
Employees  
Retirement Board  
Annual financial  
report

# **State of Montana Public Employees Retirement Board**

## **Department of Administration**

- Public Employees' Retirement System
- Municipal Police Officers' Retirement System
- Game Wardens' Retirement System
- Sheriffs' Retirement System
- Judges' Retirement System
- Highway Patrolmen's Retirement System
- Firefighters' Unified Retirement System
- Volunteer Firefighters' Compensation Act

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**Annual Financial Report  
Fiscal Year Ended June 30, 1987**

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PUBLIC EMPLOYEES' RETIREMENT DIVISION

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TED SCHWINDEN, GOVERNOR

(406) 444 3154

STATE OF MONTANA

1712 9TH AVENUE  
HELENA, MONTANA 59620 0131

January 20, 1988

The Honorable Ted Schwinden  
Governor of Montana  
State Capitol  
Helena, MT 59620

Dear Governor Schwinden:

The Public Employees' Retirement Board and the Department of Administration are pleased to present the Fifth Annual Consolidated Report of the Public Employees' Retirement Division. The report discusses the operating and funding status of the eight retirement systems and the social security program administered by the Public Employees' Retirement Division.

During the 42nd year of operation, the combined assets of the retirement systems have increased by \$83.9 million to \$740.8 million. This increase includes investment earnings during the 1987 fiscal year of \$74.1 million.

Over 40 pieces of legislation impacting these retirement systems were debated during the recent legislature. While changes were enacted in almost every system, no changes in contribution rates were required from employees, employers or the state and the administrative operating costs of this division have continued to decrease.

Social security contributions are no longer collected by the state for audit and transmittal to the federal government. This procedural change has eliminated the state's ability to gain investment earnings on these funds to be used to help defray the costs of administering the social security program and the retirement systems. At the same time, the agency continues to be responsible for extending and modifying social security coverage agreements for state and local government employees and for auditing and collecting contributions prior to calendar year 1987. We are progressing toward completion and phase-out the audit and collection activities -- a process which should be completed before FY 91, depending upon federal timetables.

Respectfully submitted,

*Lawrence P. Nachtsheim*  
LAWRENCE P. NACHTSHEIM  
Administrator



# TABLE OF CONTENTS

## PAGE

Retirement Board, Administrative Officials	
Professional Consultant . . . . .	1
Introduction . . . . .	2
Financial Section. . . . .	5
Balance Sheet	6
Statement of Revenues, Expenses & Changes in Fund Balance	9
Statement of Changes in Financial Position	11
Notes to Financial Statements	13
Statistical Section. . . . .	17
Comparative Summary	18
P.E.R.S.	20
Municipal Police Officers	24
Game Wardens	28
Sheriffs	32
Judges	36
Highway Patrolmen	40
Firefighters' Unified	44
Volunteer Firefighters	48
Actuarial Section. . . . .	51
Introduction - Funding Method	52
Actuarial Assumptions	53
Actuarial Modifications	54
P.E.R.S.	55
Municipal Police Officers	56
Game Wardens	57
Sheriffs	58
Judges	59
Highway Patrolmen	61
Firefighters' Unified	62

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APPOINTIVE AND ADMINISTRATIVE OFFICIALS

PUBLIC EMPLOYEES' RETIREMENT BOARD

		<u>Term Expires</u>
Mona Jamison	Helena	1988
Franklin H. Steyaert	Great Falls	1988
Michael S. Muszkiewicz	Helena	1989
John L. Prebil, President	Helena	1990
E.J. McGreavey	Anaconda	1991
Robert L. Batista	Great Falls	1992

Administrative Staff

Larry Nachtsheim, Administrator

Paul Smietanka, Board Attorney

Linda King, Assistant Administrator

Joan Miller, Operations Bureau Chief

Beverly Brinkley, Benefits Bureau Chief

Michael O'Connor, Accountant

Professional Consultants

Hendrickson, Miller & Associates, Inc.

Actuarial Consultants  
Helena, Montana





## INTRODUCTION

The Public Employees' Retirement Division (PERD) of the Department of Administration administers the activities of the eight retirement systems listed below:

Public Employees' Retirement System	(PERS)
Municipal Police Officers' Retirement System	(Police Officers)
Game Wardens' Retirement System	(Game Wardens)
Sheriffs' Retirement System	(Sheriffs)
Judges' Retirement System	(Judges)
Highway Patrolmen's Retirement System	(Highway Patrolmen)
Firefighters' Unified Retirement System	(Firefighters' Unified)
Volunteer Firefighters' Compensation Act	(Volunteer Firefighters)

The purpose of the retirement systems is to provide retirement benefits to eligible retired employees or their beneficiaries in the most efficient manner. In addition to administering the retirement systems, PERD also collects delinquent Social Security payments from state and local government entities and disburses these collections to the federal government.

The following schedule summarizes the membership of active and retired employees in each retirement system.

<u>At June 30, 1987</u>		
<u>Retirement System</u>	<u>Active Members</u>	<u>Members Receiving Monthly Pensions</u>
Public Employees'	27,418	8,802
Municipal Police Officers'	436	381
Game Wardens'	84	46
Sheriffs'	530	72
Judges'	42	22
Highway Patrolmen's	194	155
Firefighters' Unified	442	365
Volunteer Firefighters'	<u>0</u>	<u>422</u>
Total	<u>29,146</u>	<u>10,265</u>

During fiscal year 1987 there were 733 pension additions and 268 deletions for a net increase of 465. The number of pensioners receiving monthly checks rose from 9,800 on June 30, 1986 to 10,265 on June 30, 1987, an increase of 4.75%.

Total pensions paid by the Division in fiscal year 1987 amounted to 49.5 million up from 46.2 million in fiscal year 1986, an increase of 7.1%.

An actuarial valuation is performed biennially to determine the adequacy of each retirement system's funding. The results of the actuarial valuations as of July 1, 1986 are as follows:

<u>Retirement System</u>	<u>Adequacy of Funding</u> <u>7-1-86</u>
Public Employees'	Adequate
Municipal Police Officers'	Adequate
Game Wardens'	Adequate
Sheriffs'	Adequate
Judges'	Adequate
Highway Patrolmen's	Adequate
Firefighters' Unified	Adequate

The division is governed by a six-member Public Employees' Retirement Board whose members are appointed by the Governor to five-year terms. The Board has exclusive control over administering the funds of the eight retirement systems. Staffing and other administrative functions are the responsibility of the Department of Administration.

The Treasury Bureau of the Department of Administration is custodian of the retirement funds, subject to the retirement board's administrative controls. The Board of Investments invests system assets in the various securities allowed by law. The Department of Administration provides legal counsel for the Public Employees' Retirement Board.



# FINANCIAL SECTION

BALANCE SHEET

STATEMENT OF REVENUES, EXPENSES AND  
CHANGES IN FUND BALANCE

STATEMENT OF CHANGES IN FINANCIAL POSITION

NOTES TO FINANCIAL STATEMENTS



PUBLIC EMPLOYEES' RETIREMENT DIVISION  
BALANCE SHEET  
JUNE 30, 1987

	<u>P.E.R.S.</u>	<u>POLICE OFFICERS</u>	<u>GAME WARDENS</u>	<u>SHERIFFS</u>
<u>ASSETS</u>				
Cash in Treasury	\$ 763,116	\$ 192,950	\$ 28,260	\$ 104,326
Accounts Receivable - Other				10,000
Unamortized Deferred Gains & Losses	10,922,212	158,723	126,833	153,059
Accrued Employee Contributions Rec'ble	1,440,909	48,071	6,730	47,111
Accrued Employer Contributions Rec'ble	2,303,609	100,592	6,198	49,295
Accrued Investment Income Receivable	11,551,761	588,586	210,879	770,124
Accrued State Contributions Rec'ble		2,499,136		
Investments:				
Securities-at-Cost	544,363,388	20,514,928	6,670,803	19,826,177
Common Stocks-at-Cost	58,767,687			
Other Investments	<u>136,721</u>	<u>1,397,561</u>	<u>895,805</u>	<u>1,595,937</u>
Total Assets	\$630,249,403	\$25,500,547	\$7,945,508	\$22,556,029
<u>LIABILITIES</u>				
Accounts Payable	\$ 791,945	\$ 20,884	\$ 4,178	\$ 76,776
Accrued Refunds	658,406			
Unamortized Mortgage Discount	171,157			
Deferred Revenue	<u>1,911</u>	<u>41</u>		
Net Assets Available for Benefits	<u>\$628,625,984</u>	<u>\$25,479,622</u>	<u>\$7,941,330</u>	<u>\$22,479,253</u>
<u>FUND BALANCE</u>				
Annuity Savings Reserve	\$164,205,984	\$ 4,305,963	\$1,393,588	\$ 4,649,031
Annuity Savings Interest Reserve	69,646,593	1,644,976	825,137	1,648,489
Pension Accumulation Reserve	<u>394,773,407</u>	<u>19,528,683</u>	<u>5,722,605</u>	<u>16,181,733</u>
Total Fund Balance	<u>\$628,625,984</u>	<u>\$25,479,622</u>	<u>\$7,941,330</u>	<u>\$22,479,253</u>

The financial notes are an integral part of this statement.





PUBLIC EMPLOYEES' RETIREMENT DIVISION  
BALANCE SHEET  
JUNE 30, 1987

	JUDGES	HIGHWAY PATROLMEN	FIREFIGHTERS UNIFIED	VOLUNTEER FIREFIGHTERS
<u>ASSETS</u>				
Cash in Treasury	\$ 61,539	\$ 202,534	\$ 454,422	\$ 4,591
Accounts Receivable - Other	48,541			
Unamortized Deferred Gains & Losses	51,812	300,453	(243,205)	59,705
Accrued Employee Contributions Rec'ble	4,732	15,993	41,655	
Accrued Employer Contributions Rec'ble	4,696	31,726	131,259	
Accrued Investment Income Receivable	206,466	436,808	437,444	123,228
Accrued State Contributions Rec'ble			3,033,477	483,790
Investments:				
Securities-at-Cost	7,685,983	16,173,824	18,350,426	4,633,959
Common Stocks-at-Cost	945,131	1,495,299	1,195,908	
Other Investments			185,765	
Total Assets	\$9,008,900	\$18,656,637	\$23,587,151	\$5,305,273
<u>LIABILITIES</u>				
Accounts Payable	\$ 2,898	\$ 220,729	\$ 20,905	\$ 56,697
Net Assets Available for Benefits	<u>\$9,006,002</u>	<u>\$18,435,908</u>	<u>\$23,566,246</u>	<u>\$5,248,576</u>
<u>FUND BALANCE</u>				
Annuity Savings Reserve	\$ 943,151	\$ 3,274,395	\$ 4,499,497	\$
Annuity Savings Interest Reserve	462,985	1,671,834	1,510,173	
Pension Accumulation Reserve	<u>7,599,866</u>	<u>13,489,679</u>	<u>17,556,576</u>	<u>5,248,576</u>
Total Fund Balance	<u>\$9,006,002</u>	<u>\$18,435,908</u>	<u>\$23,566,246</u>	<u>\$5,248,576</u>

The financial notes are an integral part of this statement.



PUBLIC EMPLOYEES' RETIREMENT DIVISION

SOCIAL SECURITY

BALANCE SHEET

JUNE 30, 1987

ASSETS

Cash	\$ 1,795.86
Investments	335,700.00
Accounts Receivable	<u>73.03</u>
TOTAL ASSETS	<u>\$ 337,568.89</u>

FUND BALANCE

Fund Balance	<u>\$ 337,568.89</u>
TOTAL FUND BALANCE	<u>\$ 337,568.89</u>

The financial notes are an integral part of this statement.



PUBLIC EMPLOYEES' RETIREMENT DIVISION  
STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN FUND BALANCE  
FISCAL YEARS ENDED JUNE 30, 1987 and JUNE 30, 1986

	<u>P.E.R.S.</u>		<u>POLICE OFFICER</u>		<u>GAME WARDENS</u>		<u>SHERIFFS</u>	
	<u>1987</u>	<u>1986</u>	<u>1987</u>	<u>1986</u>	<u>1987</u>	<u>1986</u>	<u>1987</u>	<u>1986</u>
<u>REVENUES</u>								
Retirement Contributions								
Member	\$ 26,950,278	\$ 26,402,314	\$ 638,083	\$ 631,450	\$ 193,279	\$ 177,302	\$ 836,232	\$ 822,921
Employer	27,748,078	27,361,784	1,232,552	1,184,719	163,032	155,257	877,914	879,876
State			2,499,136	2,339,066				
Investment Income & Dividends	63,402,152	58,592,716	2,519,097	2,499,684	737,861	787,657	2,252,834	2,370,170
Fines & Forfeitures					218,582	221,265		
Miscellaneous Revenues		582,037		16,500		3,135		12,540
Payback of Annuity Savings Int.	<u>32,119</u>	<u>15,610</u>	<u>4,941</u>		<u>9,123</u>		<u>12,527</u>	
Total Revenues	\$118,132,627	\$112,954,461	\$6,893,809	\$6,671,419	\$1,321,877	\$1,344,616	\$3,979,507	\$4,085,507
<u>EXPENSES</u>								
Benefit Payments	\$ 39,092,230	\$ 36,595,794	\$ 3,696,827	\$ 3,463,618	\$ 408,698	\$ 383,440	\$ 383,982	\$ 306,424
Refund of Member Contributions	8,427,653	8,014,381	45,680	68,764	47,393	16,353	570,303	308,047
Refund of Employer Contributions	119,925	180,709		10,433	9,335		6,930	
Administrative Fee	743,719	581,203	20,719	16,254	4,178	3,142	14,328	12,379
Investment Expense	<u>157,813</u>	<u>186,109</u>	<u>5,525</u>	<u>7,937</u>	<u>1,941</u>	<u>2,050</u>	<u>5,347</u>	<u>5,445</u>
Total Expenses	\$ 48,541,340	\$ 45,558,196	\$ 3,768,751	\$ 3,567,006	\$ 471,545	\$ 404,985	\$ 980,890	\$ 632,295
Prior Year Adjustments	\$ <u>44,798</u>	\$ <u>(2,917,140)</u>	\$ <u></u>	\$ <u>2,613</u>	\$ <u></u>	\$ <u>4,536</u>	\$ <u></u>	\$ <u>(34,358)</u>
Excess of Revenues over Expenses	\$ 69,636,085	\$ 64,479,125	\$ 3,125,058	\$ 3,107,026	\$ 850,332	\$ 944,167	\$ 2,998,617	\$ 3,418,854
Fund Balance Beginning of Year	<u>\$558,989,899</u>	<u>\$494,510,774</u>	<u>\$22,354,564</u>	<u>\$19,247,538</u>	<u>\$7,090,998</u>	<u>\$6,146,831</u>	<u>\$19,480,636</u>	<u>\$16,061,782</u>
Fund Balance at End of Year	<u>\$628,625,984</u>	<u>\$558,989,899</u>	<u>\$25,479,622</u>	<u>\$22,354,564</u>	<u>\$7,941,330</u>	<u>\$7,090,998</u>	<u>\$22,479,253</u>	<u>\$19,480,636</u>

The financial notes are an integral part of this statement.



PUBLIC EMPLOYEES' RETIREMENT DIVISION  
STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN FUND BALANCE  
FISCAL YEARS ENDED JUNE 30, 1987 and JUNE 30, 1986

	<u>JUDGES</u>		<u>HIGHWAY PATROLMEN</u>		<u>FIREFIGHTERS UNIFIED</u>		<u>VOLUNTEER FIREFIGHTERS</u>	
	<u>1987</u>	<u>1986</u>	<u>1987</u>	<u>1986</u>	<u>1987</u>	<u>1986</u>	<u>1987</u>	<u>1986</u>
<u>REVENUES</u>								
Retirement Contributions								
Member	\$ 126,818	\$ 127,395	\$ 464,598	\$ 487,531	\$ 553,959	\$ 538,397		
Employer	122,602	123,682	871,692	874,085	1,210,874	1,220,381		
State					3,033,477	2,759,542	483,790	500,000
Investment Income & Dividends	879,367	829,759	1,782,805	1,653,267	2,001,595	2,310,399	534,766	464,906
License Fee Collections			654,896	650,619				
Court Fees	549,873	523,060						
Miscellaneous Revenues		2,310		7,095		16,335		6,270
Payback of Annuity Savings Int.			2,716			1,489		
Total Revenues	<u>\$1,678,660</u>	<u>\$1,606,206</u>	<u>\$ 3,776,707</u>	<u>\$ 3,672,597</u>	<u>\$ 6,799,905</u>	<u>\$ 6,846,543</u>	<u>\$ 1,018,556</u>	<u>\$ 971,176</u>
<u>EXPENSES</u>								
Benefit Payments	\$ 436,094	\$ 437,240	\$ 1,159,078	\$ 974,114	\$ 3,730,035	\$ 3,484,636	\$ 517,693	\$ 525,851
Refund of Member Contributions	22,766	1,577	34,022	1,696	29,933	32,681		
Refund of Employer Contributions		1,362			3,540			
Supplemental Group Insurance Pay							21,825	20,700
Administrative Fee	2,898	2,238	8,943	7,013	20,905	16,089	13,446	6,157
Investment Expense	2,244	2,251	4,297	4,418	4,626	4,835	1,208	1,320
Total Expenses	<u>\$ 464,002</u>	<u>\$ 444,668</u>	<u>\$ 1,206,340</u>	<u>\$ 987,241</u>	<u>\$ 3,789,039</u>	<u>\$ 3,538,241</u>	<u>\$ 554,172</u>	<u>\$ 554,028</u>
Prior Year Adjustments	<u>\$ 21,834</u>	<u>\$ (6,495)</u>	<u>\$ _____</u>	<u>\$ (6,132)</u>	<u>\$ _____</u>	<u>\$ 11,407</u>	<u>\$ (16,101)</u>	<u>\$ 86,258</u>
Excess of Revenues over Expenses	\$1,236,492	\$1,155,043	\$ 2,570,367	\$ 2,679,224	\$ 3,010,866	\$ 3,319,709	\$ 448,283	\$ 503,406
Fund Balance Beginning of Year	<u>\$7,769,510</u>	<u>\$6,614,467</u>	<u>\$15,865,541</u>	<u>\$13,186,317</u>	<u>\$20,555,380</u>	<u>\$17,235,671</u>	<u>\$ 4,800,293</u>	<u>\$4,296,887</u>
Fund Balance at End of Year	<u><u>\$9,006,002</u></u>	<u><u>\$7,769,510</u></u>	<u><u>\$18,435,908</u></u>	<u><u>\$15,865,541</u></u>	<u><u>\$23,566,246</u></u>	<u><u>\$20,555,380</u></u>	<u><u>\$ 5,248,576</u></u>	<u><u>\$4,800,293</u></u>

The financial notes are an integral part of this statement.





PUBLIC EMPLOYEES' RETIREMENT DIVISION  
STATEMENT OF CHANGES IN FINANCIAL POSITION  
FISCAL YEARS ENDED JUNE 30, 1987 and JUNE 30, 1986

	<u>P.E.R.S.</u>		<u>POLICE OFFICERS</u>		<u>GAME WARDENS</u>		<u>SHERIFFS</u>	
	<u>1987</u>	<u>1986</u>	<u>1987</u>	<u>1986</u>	<u>1987</u>	<u>1986</u>	<u>1987</u>	<u>1986</u>
<u>SOURCES OF WORKING CAPITAL</u>								
Excess of Revenues Over Expenses.	\$69,636,085	\$64,479,125	\$3,125,058	\$3,107,026	\$850,332	\$944,167	\$2,998,617	\$3,418,854
Increase (Decrease) in Working Capital	<u>\$69,636,085</u>	<u>\$64,479,125</u>	<u>\$3,125,058</u>	<u>\$3,107,026</u>	<u>\$850,332</u>	<u>\$944,167</u>	<u>\$2,998,617</u>	<u>\$3,418,854</u>
<u>ELEMENTS OF WORKING CAPITAL</u>								
<u>INCREASE (DECREASE)</u>								
Cash	\$(3,403,388)	\$ 2,307,748	\$ 182,020	\$ (39,962)	\$ 22,892	\$ (1,889)	\$ 64,928	\$ 10,008
Accounts Receivable - Other	(64)	(2,734,265)	(834)	(240)	(21,662)	17,332	9,392	608
Accrued Employee Contributions Rec'ble	(22,706)	18,810	538	15,992	111	286	(3,032)	(2,378)
Accrued Employer Contributions Rec'ble	708,718	40,382	11,465	(18,789)	223	243	(4,416)	(2,645)
Accrued State Contributions Receivable			160,070	237,821				
Accrued Investment Income Receivable	1,364,687	203,967	117,469	15,912	32,191	9,611	324,279	33,379
Investments	73,914,559	67,541,570	2,699,408	2,988,995	844,314	965,170	2,678,888	3,413,353
Unamortized Deferred Gains & Losses	(2,157,217)	(2,795,765)	(24,153)	(92,703)	(35,517)	(34,628)	5,354	(40,814)
Unamortized Mortgage Discount	40,614	57,575						
Accrued Expenses	(861,393)	(107,105)	(20,925)		7,780	(11,958)	(76,776)	7,343
Deferred Revenue	(1,602)	85						
Compensated Absences	53,877	(53,877)						
INCREASE (DECREASE) IN WORKING CAPITAL	<u>\$69,636,085</u>	<u>\$64,479,125</u>	<u>\$3,125,058</u>	<u>\$3,107,026</u>	<u>\$850,332</u>	<u>\$944,167</u>	<u>\$2,998,617</u>	<u>\$3,418,854</u>

The financial notes are an integral part of this statement.



PUBLIC EMPLOYEES' RETIREMENT DIVISION  
STATEMENT OF CHANGES IN FINANCIAL POSITION  
FISCAL YEARS ENDED JUNE 30, 1987 and JUNE 30, 1986

	<u>JUDGES</u>		<u>HIGHWAY PATROLMEN</u>		<u>FIREFIGHTERS UNIFIED</u>		<u>VOLUNTEER FIREFIGHTERS</u>	
	<u>1987</u>	<u>1986</u>	<u>1987</u>	<u>1986</u>	<u>1987</u>	<u>1986</u>	<u>1987</u>	<u>1986</u>
<u>SOURCES OF WORKING CAPITAL</u>								
Excess of Revenues Over Expenses	<u>\$1,236,492</u>	<u>\$1,155,043</u>	<u>\$2,570,367</u>	<u>\$2,679,224</u>	<u>\$3,010,866</u>	<u>\$3,319,709</u>	<u>\$448,283</u>	<u>\$503,406</u>
Increase (Decrease) in Working Capital	<u>\$1,236,492</u>	<u>\$1,155,043</u>	<u>\$2,570,367</u>	<u>\$2,679,224</u>	<u>\$3,010,866</u>	<u>\$3,319,709</u>	<u>\$448,283</u>	<u>\$503,406</u>
<u>ELEMENTS OF WORKING CAPITAL</u>								
<u>INCREASE (DECREASE)</u>								
Cash	\$ 56,634	\$ (2,172)	\$ 156,742	\$ 37,484	\$ 254,796	\$ 137,422	\$ 2,867	\$ 250
Accounts Receivable - Other	(1,133)	(48,602)	(334)	334	(828)	828	(337)	337
Accrued Employee Contributions Rec'ble	(204)	168	9	(239)	1,190	12,086		
Accrued Employer Contributions Rec'ble	(88)	144	450	(394)	30,551	15,346		
Accrued State Contributions Receivable					273,935	328,212	(16,210)	161,258
Accrued Investment Income Receivable	44,656	22,008	96,038	34,000	74,694	(11,036)	933	20,512
Investments	1,149,380	1,197,586	2,578,675	2,613,226	2,419,820	2,854,833	508,703	322,167
Unamortized Deferred Gains & Losses	(9,855)	(14,089)	(40,494)	(6,465)	(22,387)	(17,989)	8,724	(846)
Accrued Expenses	(2,898)		(220,719)	1,278	(20,905)	-0-	(56,397)	(272)
Deferred Revenue						7		
INCREASE (DECREASE) IN WORKING CAPITAL	<u>\$1,236,492</u>	<u>\$1,155,043</u>	<u>\$2,570,367</u>	<u>\$2,679,224</u>	<u>\$3,010,866</u>	<u>\$3,319,709</u>	<u>\$448,283</u>	<u>\$503,406</u>

The financial notes are an integral part of this statement.



PUBLIC EMPLOYEES' RETIREMENT DIVISION

Notes to the Financial Statements

Fiscal Year Ended June 30, 1987

1. DESCRIPTION OF SYSTEMS

The retirement systems administered by the Public Employees' Retirement Division (PERD) are contributory defined benefit plans providing retirement, death and disability benefits. Information about each system's membership, contributions and benefit provisions are contained in state statutes, administrative rules and handbooks provided by the Division.

2. PLAN MEMBERSHIP

Employers and Employee membership data:

	<u>Employer Members</u>	<u>Active Members</u>
P.E.R.S.		
State	55	10,184
County	55	5,602
Cities/Towns	78	2,527
Colleges/Universities	6	2,257
School Districts	206	5,814
Other	<u>54</u>	<u>1,034</u>
TOTAL P.E.R.S. Members	454	27,418
Police Officers	16	436
Game Wardens	1	84
Sheriffs	54	530
Judges	1	42
Highway Patrolmen	1	194
Firefighters Unified	<u>14</u>	<u>442</u>
TOTAL ALL SYSTEMS	<u>541</u>	<u>29,146</u>

### 3. SUMMARY OF SIGNIFICANT ACCOUNTING POLICES

#### a. Method of Accounting

PERD maintains records and prepares financial statements using fund accounting principles and the accrual basis of accounting. The accrual basis records expenses when the liability is incurred and revenues are recorded in the accounting period in which they are earned and become measurable.

#### b. Investments in Securities

Securities are stated at cost for investments in federal and state government securities and corporate securities, increased by the amount of unamortized premiums and purchased interest and reduced by the amount of unamortized bond discounts.

<u>Retirement System</u>	<u>Unamortized Premiums</u>	<u>Interest Purchased</u>	<u>Bond Discount</u>
P.E.R.S.	1,478,664	392,110	18,551,260
Police Officers	225,759	7,212	502,626
Game Wardens	63,969	2,188	249,565
Sheriffs	188,276	5,872	370,971
Judges	63,660	2,487	217,531
Highway Patrolmen	76,072	10,143	562,455
Firefighters Unified	242,750	37,719	236,344
Volunteer Firefighters	32,767	12,940	171,798

At June 30, 1987 the market value of securities for each system were as follows:

P.E.R.S.	681,722,820
Police Officers	23,180,204
Game Wardens	8,248,497
Sheriffs	23,139,883
Judges	9,386,058
Highway Patrolmen	18,887,236
Firefighters Unified	20,212,297
Volunteer Firefighters	4,698,052

#### 4. ADMINISTRATIVE FEE

Each retirement system's portion of the administrative fee is allocated based on the total number of active and retired members of that system.

#### 5. GAINS AND LOSSES ON BOND SWAPS

The deferral and amortization method of accounting is used for gains and losses on bond swaps. Under this method, gains and losses are netted against the investment account and amortized over the life of the bond acquired or sold, whichever is less.

#### 6. STATE CONTRIBUTIONS

Effective July 1, 1985, the dollar amount for the state's contribution to the Municipal Police Officers' Retirement Fund was calculated on 15.06 percent of the annual compensation paid to all active members during the preceding year, as stated in 19-9-702, MCA.

Effective July 1, 1985, the dollar amount for the state's contribution to the Firefighters' Unified Retirement Fund was calculated at 22.98 percent of the annual compensation paid to all active members during the preceding year, as stated in 19-13-604, MCA.

Each year the Volunteer Firefighters' Fund receives 5 percent of the premium taxes collected by the State Auditor's Office.

#### 7. OTHER INVESTMENTS

Other investments are being controlled by the cities which are member employers of the retirement system. Those investments are not under the control of the Board of Investments.

#### 8. SUPPLEMENTAL PENSION BENEFITS

The Municipal Police Officers' Retirement System provides supplemental benefits to members who retired prior to July 1, 1975. These benefits are paid from the premium tax fund by the State Auditor's Office. Similarly, the

Firefighters' Unified Retirement System provides supplemental benefits to members who retired prior to July 1, 1973. The benefits are also paid from the premium tax fund by the State Auditor's Office.

The annual supplemental benefits provided as of July 1, 1987 under the Municipal Police Officers' Retirement System are \$961,504. The annual supplemental benefits provided under the Firefighters' Unified Retirement System are \$972,053.

The liability for these supplemental benefits was not included in the actuarial valuations as of July 1, 1987 since the costs are funded from a source outside of the respective retirement funds.

#### 9. ABBREVIATIONS

The financial statements include acronyms abbreviating each retirement system. The abbreviations are explained below.

P.E.R.S.	Public Employees' Retirement System
Police Officers	Municipal Police Officers' Retirement System
Game Wardens	Game Wardens' Retirement System
Sheriffs	Sheriffs' Retirement System
Judges	Judges' Retirement System
Highway Patrolmen	Highway Patrolmen's Retirement System
Firefighters Unified	Firefighters' Unified Retirement System
Volunteer Firefighters	Volunteer Firefighters' Compensation Act

#### 10. COMPENSATED ABSENCES

Unused vacation may be accumulated by employees of the Division. Unused vacation is paid at the time of permanent separation from service. Unused sick leave may be accumulated, and is paid at the rate of 25% of the amount accumulated. (Pre 7-1-71 sick leave does not qualify for reimbursement.) The accrued liability for unused vacation and sick leave incurred by the Division was \$51,634 and \$53,877 at June 30, 1987 and 1986, respectively. The difference in these balances is included in expense for the fiscal year.



# STATISTICAL SECTION

COMPARATIVE SUMMARY

MEMBERSHIP

RETIRED MEMBERS AND BENEFIT RECIPIENTS

CONTRIBUTION RATES

REVENUE BY SOURCE

EXPENSES BY TYPE

ADDITIONS TO NET ASSETS AVAILABLE FOR BENEFITS

COMPARATIVE SUMMARY OF NET ASSETS AVAILABLE FOR BENEFITS  
AND TOTAL ACTUARIAL PRESENT VALUE OF TOTAL BENEFITS



COMPARATIVE SUMMARY OF PENSION PAYMENTS

(By Fiscal Year)  
(In thousands of dollars)

	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
PERS	\$14,980	\$17,682	\$19,373	\$23,068	\$25,036	\$29,135	\$31,238	\$36,596	\$39,092
MPORS	2,021	2,160	2,301	2,460	2,743	2,926	3,151	3,464	3,697
GWRS	167	183	217	222	278	299	301	383	409
SRS	134	166	154	184	205	223	242	306	384
JRS	147	212	220	234	329	410	417	437	436
HPRS	428	481	592	715	753	806	843	974	1,159
FURS				2,546	2,748	2,996	3,217	3,485	3,730
VFCA						401	268	508	502
TOTAL	<u>\$17,877</u>	<u>\$20,884</u>	<u>\$22,857</u>	<u>\$29,429</u>	<u>\$32,092</u>	<u>\$37,196</u>	<u>\$39,677</u>	<u>\$46,153</u>	<u>\$49,409</u>

COMPARATIVE SUMMARY OF ACTIVE MEMBERSHIP

(By Fiscal Year)

	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
PERS	29,677	29,109	27,573	26,061	25,857	26,026	26,520	26,767	27,418
MPORS	426	450	443	434	445	435	436	436	436
GWRS	90	89	88	90	97	85	85	85	84
SRS	522	528	554	575	584	537	539	582	530
JRS	34	33	37	37	40	41	42	42	42
HPRS	224	213	195	204	219	197	198	201	194
FURS				454	451	395	398	403	442
TOTAL	<u>30,973</u>	<u>30,422</u>	<u>28,890</u>	<u>27,855</u>	<u>27,693</u>	<u>27,716</u>	<u>28,218</u>	<u>28,516</u>	<u>29,146</u>

PERS - Public Employees' Retirement System  
MPORS - Municipal Police Officers' Retirement System  
GWRS - Game Wardens' Retirement System  
SRS - Sheriffs' Retirement System

JRS - Judges' Retirement System  
HPRS - Highway Patrolmen's Retirement System  
FURS - Firefighters' Unified Retirement System  
VFCA - Volunteer Firefighters' Compensation Act

COMPARATIVE SUMMARY OF RETIREES

(Fiscal Year '87)

	<u>Beginning Balance</u>	<u>Additional Retirees</u>	<u>Deceased Retirees</u>	<u>Ending Balance</u>
PERS	8,410	632	(240)	8,802
Police	369	16	(4)	381
Game Wardens	44	2	(0)	46
Sheriffs	59	15	(2)	72
Judges	21	2	(1)	22
Highway Patrol	145	10	(0)	155
Firefighters	357	17	(9)	365
Vol. Firefighters	<u>395</u>	<u>39</u>	<u>(12)</u>	<u>422</u>
TOTAL	<u>9,800</u>	<u>733</u>	<u>(268)</u>	<u>10,265</u>

PUBLIC EMPLOYEES' RETIREMENT SYSTEM

MEMBERSHIP

<u>PERIOD ENDED</u>	<u>ACTIVE MEMBERS</u>	<u>INACTIVE MEMBERS</u>	<u>TOTAL</u>
JUNE 30, 1979	29,677	9,446	39,123
JUNE 30, 1980	29,109	10,390	39,499
JUNE 30, 1981	27,573	11,278	38,851
JUNE 30, 1982	26,061	9,275	35,336
JUNE 30, 1983	25,857	9,702	35,559
JUNE 30, 1984	26,026	10,031	36,057
JUNE 30, 1985	26,520	9,715	36,235
JUNE 30, 1986	26,767	10,462	37,229
JUNE 30, 1987	27,418	10,276	37,694

RETIRED MEMBERS AND BENEFIT RECIPIENTS

<u>PERIOD ENDED</u>	<u>RETIREMENT</u>	<u>DISABILITY</u>	<u>SURVIVORS</u>	<u>TOTAL</u>
JUNE 30, 1979	4,668	623	156	5,447
JUNE 30, 1980	5,051	628	158	5,837
JUNE 30, 1981	5,459	649	170	6,278
JUNE 30, 1982	5,913	647	173	6,733
JUNE 30, 1983	6,343	634	181	7,158
JUNE 30, 1984	6,723	655	190	7,568
JUNE 30, 1985	7,176	654	195	8,025
JUNE 30, 1986	7,548	670	192	8,410
JUNE 30, 1987	7,893	704	205	8,802

PUBLIC EMPLOYEES' RETIREMENT SYSTEM

Participating Members by Government Unit

State	10,184
County	5,602
City	2,527
Colleges/Universities	2,257
School Districts	5,814
Other	<u>1,034</u>
TOTAL	<u><u>27,418</u></u>

PUBLIC EMPLOYEES' RETIREMENT SYSTEM

CONTRIBUTION RATES

<u>Fiscal Year</u>	<u>Employee</u>	<u>Employer</u>
1979-1981	6.00%	6.20%
1982-1983	6.00%	6.32%
1984-1987	6.00%	6.417%

COMPARATIVE SUMMARY OF REVENUE BY SOURCE AND EXPENSES BY TYPE

REVENUES BY SOURCE

<u>Fiscal Year</u>	<u>Member Contributions</u>	<u>Employer Contributions</u>	<u>Investment Income</u>	<u>Total</u>
1979	\$16,894,875	\$16,983,508	\$16,419,001	\$ 50,297,384
1980	18,067,795	17,986,908	19,356,770	55,411,473
1981	19,687,595	19,716,942	23,607,248	63,011,785
1982	21,192,098	21,793,019	31,650,996	74,636,113
1983	22,671,919	23,193,749	35,888,201	81,753,869
1984	23,835,463	24,816,532	41,230,396	89,882,391
1985	25,396,735	26,416,122	48,275,253	100,088,110
1986	26,402,314	27,959,431	58,592,716	112,954,461
1987	26,950,278	27,780,197	63,402,152	118,132,627

EXPENSES BY TYPE

<u>Fiscal Year</u>	<u>Benefits</u>	<u>Refunds</u>	<u>Admin Expenses*</u>	<u>Other**</u>	<u>Total</u>
1979	\$14,979,572	\$7,296,920	\$520,689	\$(6,759,653)	\$16,037,528
1980	17,682,546	6,360,685	583,444	(805,404)	23,821,271
1981	19,372,966	6,970,900	807,558	160,414	27,311,838
1982	23,068,413	8,295,763	563,065	(466,854)	31,460,387
1983	25,036,076	6,230,042	604,641	88,632	31,959,391
1984	29,134,512	6,838,769	715,150	(434,424)	36,254,007
1985	31,237,495	8,428,750	669,816	122,372	40,458,433
1986	36,595,794	8,195,090	767,312	2,917,140	48,475,336
1987	39,092,230	8,547,578	901,532	(44,798)	48,496,542

\*Includes Investment Expense

\*\*Includes Prior Year Adjustments, and FY 1979 has an adjustment to a full accrual accounting system

PUBLIC EMPLOYEES' RETIREMENT SYSTEM

Additions to Net Assets Available for Benefits

<u>Fiscal Year</u>	<u>Revenues</u>	<u>Expenses</u>	<u>Annual Additions</u>	<u>Net Assets Available</u>
1979	\$ 50,297,384	\$16,037,528	\$34,259,856	\$220,992,360
1980	55,411,473	23,821,271	31,590,202	252,582,562
1981	63,011,785	27,311,838	35,699,947	288,282,509
1982	74,636,113	31,460,387	43,175,726	331,458,235
1983	81,753,869	31,959,391	49,794,478	381,252,713
1984	89,882,391	36,254,007	53,628,384	434,881,097
1985	100,088,110	40,458,433	59,629,677	494,510,774
1986	112,954,461	48,475,336	64,479,125	558,989,899
1987	118,132,627	48,496,542	69,636,085	628,625,583

Comparative Summary of Net Assets Available for Benefits and

Total Actuarial Present Value of Total Benefits  
(in millions of dollars)

<u>Fiscal Year</u>	<u>Net Assets Available</u>	<u>Actuarial Present Value of Benefits*</u>	<u>Percentage</u>
1980	252.6	741.7	34.1
1982	331.5	932.1	35.6
1984	434.9	1,098.0	39.6
1986	558.9	1,202.1	46.5

Looking at the amount of the actuarial present value of benefits can be misleading. Expressing net assets available for benefits as a percentage of the actuarial present value of benefits provides one indication of the extent to which a retirement system is funded. Analysis of this percentage over time indicates whether the system is becoming financially stronger or weaker, the greater this percentage, the stronger the system.

\*This system is valued biennially.



MUNICIPAL POLICE OFFICERS' RETIREMENT SYSTEM

MEMBERSHIP

<u>PERIOD ENDED</u>	<u>ACTIVE MEMBERS</u>	<u>INACTIVE MEMBERS</u>	<u>TOTAL</u>
JUNE 30, 1979	426	4	430
JUNE 30, 1980	450	4	454
JUNE 30, 1981	443	6	449
JUNE 30, 1982	434	5	439
JUNE 30, 1983	445	5	450
JUNE 30, 1984	435	5	440
JUNE 30, 1985	436	7	443
JUNE 30, 1986	436	7	443
JUNE 30, 1987	436	12	448

RETIRED MEMBERS AND BENEFIT RECIPIENTS

<u>PERIOD ENDED</u>	<u>RETIREMENT</u>	<u>DISABILITY</u>	<u>SURVIVORS</u>	<u>TOTAL</u>
JUNE 30, 1979	216	65	27	308
JUNE 30, 1980	225	69	25	319
JUNE 30, 1981	232	71	24	327
JUNE 30, 1982	235	74	22	331
JUNE 30, 1983	240	79	24	343
JUNE 30, 1984	246	82	26	354
JUNE 30, 1985	250	84	25	359
JUNE 30, 1986	258	86	25	369
JUNE 30, 1987	268	88	25	381

MUNICIPAL POLICE OFFICERS' RETIREMENT SYSTEM

Participating Members by City

Anaconda	17
Baker	2
Billings	102
Bozeman	26
Butte	41
Glasgow	10
Glendive	10
Great Falls	62
Havre	16
Helena	35
Kalispell	21
Lewistown	11
Livingston	9
Miles City	15
Missoula	58
Plains	<u>1</u>
TOTAL	<u><u>436</u></u>

MUNICIPAL POLICE OFFICERS' RETIREMENT SYSTEM

CONTRIBUTION RATES

<u>Fiscal Year</u>	<u>Employee</u>	<u>Employer</u>	<u>State</u>
1979-1981	6.00%/7.50%	14.00%	14.00%
1982-1985	6.00%/7.50%	14.04%	14.04%
1986-1987	6.00%/7.50%	13.02%	15.06%

COMPARATIVE SUMMARY OF REVENUE BY SOURCE AND EXPENSES BY TYPE

REVENUES BY SOURCE

<u>Fiscal Year</u>	<u>Member Contributions</u>	<u>Employer Contributions</u>	<u>Investment Income</u>	<u>State Contributions</u>	<u>Total</u>
1979	\$357,223	\$1,008,085	\$ 408,390	\$1,279,286	\$3,052,984
1980	418,895	1,254,922	478,975	1,551,460	3,704,252
1981	443,312	1,284,954	646,487	1,679,071	4,053,824
1982	498,893	1,369,341	1,061,976	1,762,626	4,692,836
1983	525,904	1,283,056	1,306,008	1,987,188	5,102,156
1984	553,306	1,234,377	1,575,775	2,116,205	5,479,663
1985	577,408	1,306,400	1,893,642	2,101,244	5,878,694
1986	631,450	1,201,219	2,499,684	2,339,066	6,671,419
1987	638,083	1,237,493	2,519,097	2,499,136	6,893,809

EXPENSES BY TYPE

<u>Fiscal Year</u>	<u>Benefits</u>	<u>Refunds</u>	<u>Admin Expenses*</u>	<u>Other**</u>	<u>Total</u>
1979	\$2,021,331	\$ 44,760	\$ 715	\$(1,543,032)	\$ 523,774
1980	2,160,407	64,207	794	42,635	2,268,043
1981	2,300,869	77,823	2,223	(49,810)	2,331,105
1982	2,459,857	79,409	17,742	(8,814)	2,548,194
1983	2,743,215	14,819	15,676	(149,481)	2,624,229
1984	2,926,085	71,241	20,637	(79,040)	2,938,923
1985	3,151,287	108,187	18,734	602,337	3,880,545
1986	3,463,618	79,197	24,191	(2,613)	3,564,393
1987	3,696,827	45,680	26,244	-0-	3,768,751

\*Includes Investment Expense

\*\*Includes Prior Year Adjustments, and FY 1979 has an adjustment to a full accrual accounting system

MUNICIPAL POLICE OFFICERS' RETIREMENT SYSTEM

Additions to Net Assets Available for Benefits

<u>Fiscal Year</u>	<u>Revenues</u>	<u>Expenses</u>	<u>Annual Additions</u>	<u>Net Assets Available</u>
1979	\$3,052,984	\$ 523,774	\$2,529,210	\$ 6,927,152
1980	3,704,252	2,268,043	1,436,209	8,363,361
1981	4,053,824	2,331,105	1,722,719	10,086,080
1982	4,692,836	2,548,194	2,144,642	12,230,722
1983	5,102,156	2,624,229	2,477,927	14,708,649
1984	5,479,663	2,938,923	2,540,740	17,249,389
1985	5,878,694	3,880,545	1,998,149	19,247,538
1986	6,671,419	3,564,393	3,107,026	22,354,564
1987	6,893,809	3,768,751	3,125,058	25,479,622

Comparative Summary of Net Assets Available for Benefits and

Total Actuarial Present Value of Total Benefits  
(in millions of dollars)

<u>Fiscal Year</u>	<u>Net Assets Available</u>	<u>Actuarial Present Value of Benefits*</u>	<u>Percentage</u>
1980	8.4	54.6	15.4
1982	12.2	66.2	18.4
1984	17.2	71.3	24.1
1986	22.4	76.6	29.2

Looking at the amount of the actuarial present value of benefits can be misleading. Expressing net assets available for benefits as a percentage of the actuarial present value of benefits provides one indication of the extent to which a retirement system is funded. Analysis of this percentage over time indicates whether the system is becoming financially stronger or weaker, the greater this percentage, the stronger the system.

\*This system is valuated biennially.

GAME WARDENS' RETIREMENT SYSTEM

MEMBERSHIP

<u>PERIOD ENDED</u>	<u>ACTIVE MEMBERS</u>	<u>INACTIVE MEMBERS</u>	<u>TOTAL</u>
JUNE 30, 1979	90	3	93
JUNE 30, 1980	89	3	92
JUNE 30, 1981	88	3	91
JUNE 30, 1982	90	1	91
JUNE 30, 1983	97	1	98
JUNE 30, 1984	87	1	88
JUNE 30, 1985	86	1	87
JUNE 30, 1986	85	3	88
JUNE 30, 1987	84	1	85

RETIRED MEMBERS AND BENEFIT RECIPIENTS

<u>PERIOD ENDED</u>	<u>RETIREMENT</u>	<u>DISABILITY</u>	<u>SURVIVORS</u>	<u>TOTAL</u>
JUNE 30, 1979	22	5	3	30
JUNE 30, 1980	21	5	4	30
JUNE 30, 1981	24	6	4	34
JUNE 30, 1982	24	6	4	34
JUNE 30, 1983	29	6	4	39
JUNE 30, 1984	27	6	4	37
JUNE 30, 1985	30	6	4	40
JUNE 30, 1986	34	6	4	44
JUNE 30, 1987	34	8	4	46

GAME WARDENS' RETIREMENT SYSTEM

CONTRIBUTION RATES

<u>Fiscal Year</u>	<u>Employee</u>	<u>Employer</u>
1979-1981	7.00%	7.00%
1982-1985	7.00%	7.15%
1986-1987	7.90%	7.15%

COMPARATIVE SUMMARY OF REVENUE BY SOURCE AND EXPENSES BY TYPE

REVENUES BY SOURCE

<u>Fiscal Year</u>	<u>Member Cont</u>	<u>Employer Cont</u>	<u>Investment Income</u>	<u>Fines</u>	<u>Total</u>
1979	\$ 97,340	\$157,155	\$177,246	\$ -0-	\$ 431,741
1980	104,642	171,400	204,748	165,307	646,097
1981	107,302	190,661	264,362	157,068	719,393
1982	122,325	123,305	334,662	194,425	774,717
1983	161,460	163,389	409,524	233,833	968,206
1984	154,959	157,626	496,613	272,841	1,082,039
1985	151,341	153,074	589,449	260,860	1,154,724
1986	177,302	158,392	787,657	221,265	1,344,616
1987	193,279	172,155	737,861	218,582	1,321,877

EXPENSES BY TYPE

<u>Fiscal Year</u>	<u>Benefits</u>	<u>Refunds</u>	<u>Admin Expenses*</u>	<u>Other**</u>	<u>Total</u>
1979	\$166,442	\$10,716	\$4,983	\$(71,897)	\$110,244
1980	182,577	11,568	4,661	-0-	198,806
1981	217,164	24,418	5,511	4,891	251,984
1982	222,047	4,920	4,363	125,777	357,107
1983	278,240	16	3,768	(90)	281,934
1984	298,787	325	4,510	(1,763)	301,859
1985	301,159	3,776	4,199	(969)	308,165
1986	383,440	16,353	5,192	(4,536)	400,449
1987	408,698	56,728	6,119	-0-	471,545

\*Includes Investment Expense

\*\*Includes Prior Year Adjustments, and FY 1979 has an adjustment to a full accrual accounting system

GAME WARDENS' RETIREMENT SYSTEM

Additions to Net Assets Available for Benefits

<u>Fiscal Year</u>	<u>Revenues</u>	<u>Expenses</u>	<u>Annual Additions</u>	<u>Net Assets Available</u>
1979	\$ 431,741	\$110,244	\$321,497	\$2,501,510
1980	646,097	198,806	447,291	2,948,801
1981	719,393	251,984	467,409	3,416,210
1982	774,717	357,107	417,610	3,833,820
1983	968,206	281,934	686,272	4,520,092
1984	1,082,039	301,859	780,180	5,300,272
1985	1,154,724	308,165	846,559	6,146,831
1986	1,344,616	400,449	944,167	7,090,998
1987	1,321,877	471,545	850,332	7,941,330

Comparative Summary of Net Assets Available for Benefits and

Total Actuarial Present Value of Total Benefits  
(in millions of dollars)

<u>Fiscal Year</u>	<u>Net Assets Available</u>	<u>Actuarial Present Value of Benefits*</u>	<u>Percentage</u>
1980	2.9	8.7	33.3
1982	3.8	11.2	33.9
1984	5.3	12.2	43.4
1986	7.1	12.6	56.3

Looking at the amount of the actuarial present value of benefits can be misleading. Expressing net assets available for benefits as a percentage of the actuarial present value of benefits provides one indication of the extent to which a retirement system is funded. Analysis of this percentage over time indicates whether the system is becoming financially stronger or weaker, the greater this percentage, the stronger the system.

\*This system is valuated biennially.

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SHERIFFS' RETIREMENT SYSTEM

MEMBERSHIP

<u>PERIOD ENDED</u>	<u>ACTIVE MEMBERS</u>	<u>INACTIVE MEMBERS</u>	<u>TOTAL</u>
JUNE 30, 1979	522	29	551
JUNE 30, 1980	528	28	556
JUNE 30, 1981	554	26	580
JUNE 30, 1982	575	16	591
JUNE 30, 1983	584	15	599
JUNE 30, 1984	537	14	551
JUNE 30, 1985	539	13	552
JUNE 30, 1986	541	22	563
JUNE 30, 1987	530	58	588

RETIRED MEMBERS AND BENEFIT RECIPIENTS

<u>PERIOD ENDED</u>	<u>RETIREMENT</u>	<u>DISABILITY</u>	<u>SURVIVORS</u>	<u>TOTAL</u>
JUNE 30, 1979	28	6	4	38
JUNE 30, 1980	28	8	5	41
JUNE 30, 1981	30	8	5	43
JUNE 30, 1982	31	9	6	46
JUNE 30, 1983	33	9	7	49
JUNE 30, 1984	33	12	7	52
JUNE 30, 1985	34	12	9	55
JUNE 30, 1986	37	13	9	59
JUNE 30, 1987	46	17	9	72

SHERIFFS' RETIREMENT SYSTEM

CONTRIBUTION RATES

<u>Fiscal Year</u>	<u>Employee</u>	<u>Employer</u>
1979-1981	7.00%	7.55%
1982-1985	7.00%	7.62%
1986-1987	7.00%	7.67%

COMPARATIVE SUMMARY OF REVENUE BY SOURCE AND EXPENSES BY TYPE

REVENUES BY SOURCE

<u>Fiscal Year</u>	<u>Member Contributions</u>	<u>Employer Contributions</u>	<u>Investment Income</u>	<u>Total</u>
1979	\$435,122	\$467,788	\$ 356,359	\$1,259,269
1980	449,728	455,580	448,345	1,353,653
1981	516,085	560,911	584,511	1,661,507
1982	620,032	668,628	818,235	2,106,895
1983	699,752	749,132	1,080,802	2,529,686
1984	752,392	805,584	1,363,181	2,921,157
1985	784,899	842,733	1,704,246	3,331,878
1986	822,921	892,416	2,370,170	4,085,507
1987	836,232	890,441	2,252,834	3,979,507

EXPENSES BY TYPE

<u>Fiscal Year</u>	<u>Benefits</u>	<u>Refunds</u>	<u>Admin Expenses*</u>	<u>Other**</u>	<u>Total</u>
1979	\$133,780	\$339,641	\$ 629	\$(144,667)	\$329,383
1980	165,797	155,065	733	16,052	337,647
1981	154,129	168,935	1,864	64,006	388,934
1982	184,406	270,425	12,419	26,451	493,701
1983	204,439	136,442	11,957	6,794	359,632
1984	222,818	278,658	16,119	(14,727)	502,868
1985	242,054	219,951	14,992	11,372	488,369
1986	306,424	308,047	17,824	34,358	666,653
1987	383,983	577,233	19,675	-0-	980,891

\*Includes Investment Expense

\*\*Includes Prior Year Adjustments, and FY 1979 has an adjustment to a full accrual accounting system

SHERIFFS' RETIREMENT SYSTEM

Additions to Net Assets Available for Benefits

<u>Fiscal Year</u>	<u>Revenues</u>	<u>Expenses</u>	<u>Annual Additions</u>	<u>Net Assets Available</u>
1979	\$1,259,269	\$329,383	\$ 929,886	\$ 4,728,157
1980	1,353,653	337,647	1,016,006	5,744,163
1981	1,661,507	388,934	1,272,573	7,016,736
1982	2,106,895	493,701	1,613,194	8,629,930
1983	2,529,686	359,632	2,170,054	10,799,984
1984	2,921,157	502,868	2,418,289	13,218,273
1985	3,331,878	488,369	2,843,509	16,061,782
1986	4,085,507	666,653	3,418,854	19,480,636
1987	3,979,507	980,891	2,998,616	22,479,252

Comparative Summary of Net Assets Available for Benefits and

Total Actuarial Present Value of Total Benefits  
(in millions of dollars)

<u>Fiscal Year</u>	<u>Net Assets Available</u>	<u>Actuarial Present Value of Benefits*</u>	<u>Percentage</u>
1980	5.7	16.4	34.8
1982	8.6	24.7	34.8
1984	13.2	31.0	42.6
1986	19.5	32.9	59.3

Looking at the amount of the actuarial present value of benefits can be misleading. Expressing net assets available for benefits as a percentage of the actuarial present value of benefits provides one indication of the extent to which a retirement system is funded. Analysis of this percentage over time indicates whether the system is becoming financially stronger or weaker, the greater this percentage, the stronger the system.

\*This system is valuated biennially.

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JUDGES' RETIREMENT SYSTEM

MEMBERSHIP

<u>PERIOD ENDED</u>	<u>ACTIVE MEMBERS</u>	<u>INACTIVE MEMBERS</u>	<u>TOTAL</u>
JUNE 30, 1979	34	1	35
JUNE 30, 1980	33	1	34
JUNE 30, 1981	37	1	38
JUNE 30, 1982	37	1	38
JUNE 30, 1983	40	1	41
JUNE 30, 1984	41	1	42
JUNE 30, 1985	42	1	43
JUNE 30, 1986	42	5	47
JUNE 30, 1987	42	4	46

RETIRED MEMBERS AND BENEFIT RECIPIENTS

<u>PERIOD ENDED</u>	<u>RETIREMENT</u>	<u>DISABILITY</u>	<u>SURVIVORS</u>	<u>TOTAL</u>
JUNE 30, 1979	9	2	1	12
JUNE 30, 1980	10	3	1	14
JUNE 30, 1981	10	3	1	14
JUNE 30, 1982	10	3	1	14
JUNE 30, 1983	17	2	2	21
JUNE 30, 1984	17	2	1	20
JUNE 30, 1985	18	3	0	21
JUNE 30, 1986	17	3	1	21
JUNE 30, 1987	17	4	1	22

JUDGES' RETIREMENT SYSTEM

CONTRIBUTION RATES

<u>Fiscal Year</u>	<u>Employee</u>	<u>Employer</u>
1979-1983	6.00%	6.00%
1984-1987	6.00%/7.00%	6.00%

COMPARATIVE SUMMARY OF REVENUE BY SOURCE AND EXPENSES BY TYPE

REVENUES BY SOURCE

<u>Fiscal Year</u>	<u>Member Cont</u>	<u>Employer Cont</u>	<u>Investment Income</u>	<u>Court Fees</u>	<u>Total</u>
1979	\$ 65,978	\$ 65,978	\$178,094	\$229,076	\$ 539,126
1980	73,222	73,222	207,433	243,740	597,617
1981	81,568	80,969	261,433	279,188	703,158
1982	91,783	91,783	354,097	305,844	843,507
1983	102,936	102,936	435,663	359,719	1,001,254
1984	109,392	113,333	525,520	567,151	1,315,396
1985	119,603	117,331	640,363	608,812	1,486,109
1986	127,395	125,992	829,759	523,060	1,606,206
1987	126,818	122,602	879,367	549,873	1,678,660

EXPENSES BY TYPE

<u>Fiscal Year</u>	<u>Benefits</u>	<u>Refunds</u>	<u>Admin Expenses*</u>	<u>Other**</u>	<u>Total</u>
1979	\$147,141	\$ -0-	\$2,343	\$(49,983)	\$ 99,501
1980	211,947	-0-	2,366	3,687	218,000
1981	219,596	-0-	2,908	(700)	221,804
1982	233,736	-0-	3,677	600	238,013
1983	329,149	-0-	3,103	(70,548)	261,704
1984	410,439	-0-	3,631	-0-	414,070
1985	417,235	-0-	3,553	-0-	420,788
1986	437,240	2,939	4,489	6,495	451,163
1987	436,094	22,766	5,142	(21,834)	442,168

\*Includes Investment Expense

\*\*Includes Prior Year Adjustments, and FY 1979 has an adjustment to a full accrual accounting system

JUDGES' RETIREMENT SYSTEM

Additions to Net Assets Available for Benefits

<u>Fiscal Year</u>	<u>Revenues</u>	<u>Expenses</u>	<u>Annual Additions</u>	<u>Net Assets Available</u>
1979	\$ 539,126	\$ 99,501	\$ 439,625	\$2,441,805
1980	597,617	218,000	379,617	2,821,422
1981	703,158	221,804	481,354	3,302,776
1982	843,507	238,013	605,494	3,908,270
1983	1,001,254	261,704	739,550	4,647,820
1984	1,315,396	414,070	901,326	5,549,146
1985	1,486,109	420,788	1,065,321	6,614,467
1986	1,606,206	451,163	1,155,043	7,769,510
1987	1,678,660	442,168	1,236,492	9,006,002

Comparative Summary of Net Assets Available for Benefits and

Total Actuarial Present Value of Total Benefits  
(in millions of dollars)

<u>Fiscal Year</u>	<u>Net Assets Available</u>	<u>Actuarial Present Value of Benefits*</u>	<u>Percentage</u>
1980	2.8	10.0	28.0
1982	3.9	13.7	28.5
1984	5.5	19.2	28.6
1986	7.8	18.6	41.9

Looking at the amount of the actuarial present value of benefits can be misleading. Expressing net assets available for benefits as a percentage of the actuarial present value of benefits provides one indication of the extent to which a retirement system is funded. Analysis of this percentage over time indicates whether the system is becoming financially stronger or weaker, the greater this percentage, the stronger the system.

\*This system is valued biennially.

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HIGHWAY PATROLMEN'S RETIREMENT SYSTEM

MEMBERSHIP

<u>PERIOD ENDED</u>	<u>ACTIVE MEMBERS</u>	<u>INACTIVE MEMBERS</u>	<u>TOTAL</u>
JUNE 30, 1979	224	2	226
JUNE 30, 1980	213	2	215
JUNE 30, 1981	195	2	197
JUNE 30, 1982	204	1	205
JUNE 30, 1983	219	1	220
JUNE 30, 1984	197	2	199
JUNE 30, 1985	198	2	200
JUNE 30, 1986	201	2	203
JUNE 30, 1987	194	9	203

RETIRED MEMBERS AND BENEFIT RECIPIENTS

<u>PERIOD ENDED</u>	<u>RETIREMENT</u>	<u>DISABILITY</u>	<u>SURVIVORS</u>	<u>TOTAL</u>
JUNE 30, 1979	76	5	15	96
JUNE 30, 1980	81	5	17	103
JUNE 30, 1981	92	6	23	121
JUNE 30, 1982	96	6	22	124
JUNE 30, 1983	99	6	21	126
JUNE 30, 1984	104	6	21	131
JUNE 30, 1985	107	6	21	134
JUNE 30, 1986	120	6	19	145
JUNE 30, 1987	129	7	19	155

# HIGHWAY PATROLMEN'S RETIREMENT SYSTEM

## CONTRIBUTION RATES

<u>Fiscal Year</u>	<u>Employee</u>	<u>Employer</u>
1979-1981	6.50%	16.00%
1982-1985	6.50%	16.57%
1986-1987	7.59%	26.75%

## COMPARATIVE SUMMARY OF REVENUE BY SOURCE AND EXPENSES BY TYPE

### REVENUES BY SOURCE

<u>Fiscal Year</u>	<u>Member Cont</u>	<u>Employer Cont</u>	<u>License Fee Collections</u>	<u>Invest Income</u>	<u>Total</u>
1979	\$238,069	\$618,759	\$ -0-	\$ 425,017	\$1,281,845
1980	249,834	587,375	-0-	503,074	1,340,283
1981	249,298	579,469	-0-	617,035	1,445,802
1982	296,117	672,554	-0-	763,587	1,732,258
1983	399,942	919,137	-0-	914,574	2,233,653
1984	376,444	826,266	-0-	1,095,346	2,298,056
1985	385,702	857,476	-0-	1,287,715	2,530,893
1986	487,531	881,180	650,619	1,653,267	3,672,597
1987	464,598	874,408	654,896	1,782,805	3,776,707

### EXPENSES BY TYPE

<u>Fiscal Year</u>	<u>Benefits</u>	<u>Refunds</u>	<u>Admin Expenses*</u>	<u>Other**</u>	<u>Total</u>
1979	\$ 428,334	\$16,119	\$ 839	\$ (133,591)	\$ 311,701
1980	480,722	12,873	901	1,937	496,433
1981	592,498	34,870	2,195	(1,840)	627,723
1982	714,465	7,671	8,865	(27,301)	703,700
1983	753,153	346	8,205	(1,701)	760,003
1984	805,749	11,815	10,217	(2,823)	824,958
1985	843,029	1,911	9,434	(3,747)	850,627
1986	974,114	1,696	11,431	6,132	993,373
1987	1,159,078	34,022	13,240	-0-	1,206,340

\*Includes Investment Expense

\*\*Includes Prior Year Adjustments, and FY 1979 has an adjustment to a full accrual accounting system

HIGHWAY PATROLMEN'S RETIREMENT SYSTEM

Additions to Net Assets Available for Benefits

<u>Fiscal Year</u>	<u>Revenues</u>	<u>Expenses</u>	<u>Annual Additions</u>	<u>Net Assets Available</u>
1979	\$1,281,845	\$ 311,701	\$ 970,144	\$ 5,868,816
1980	1,340,283	496,433	843,850	6,712,666
1981	1,445,802	627,723	818,079	7,530,745
1982	1,732,258	703,700	1,028,558	8,559,303
1983	2,233,653	760,003	1,473,650	10,032,953
1984	2,298,056	824,958	1,473,098	11,506,051
1985	2,530,893	850,627	1,680,266	13,186,317
1986	3,672,597	993,373	2,679,224	15,865,541
1987	3,776,707	1,206,340	2,570,367	18,435,908

Comparative Summary of Net Assets Available for Benefits and

Total Actuarial Present Value of Total Benefits  
(in millions of dollars)

<u>Fiscal Year</u>	<u>Net Assets Available</u>	<u>Actuarial Present Value of Benefits*</u>	<u>Percentage</u>
1980	6.7	19.9	33.7
1982	8.6	24.1	35.7
1984	11.5	26.7	43.1
1986	15.9	44.9	35.4

Looking at the amount of the actuarial present value of benefits can be misleading. Expressing net assets available for benefits as a percentage of the actuarial present value of benefits provides one indication of the extent to which a retirement system is funded. Analysis of this percentage over time indicates whether the system is becoming financially stronger or weaker, the greater this percentage, the stronger the system.

\*This system is valuated biennially.

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FIREFIGHTERS' UNIFIED RETIREMENT SYSTEM

MEMBERSHIP

<u>PERIOD ENDED</u>	<u>ACTIVE MEMBERS</u>	<u>INACTIVE MEMBERS</u>	<u>TOTAL</u>
JUNE 30, 1982	454	0	454
JUNE 30, 1983	451	0	451
JUNE 30, 1984	395	16	411
JUNE 30, 1985	398	18	416
JUNE 30, 1986	403	20	423
JUNE 30, 1987	442	17	459

RETIRED MEMBERS AND BENEFIT RECIPIENTS

<u>PERIOD ENDED</u>	<u>RETIREMENT</u>	<u>DISABILITY</u>	<u>SURVIVORS</u>	<u>TOTAL</u>
JUNE 30, 1982	179	104	34	317
JUNE 30, 1983	185	105	34	324
JUNE 30, 1984	202	106	34	342
JUNE 30, 1985	204	106	35	345
JUNE 30, 1986	212	111	34	357
JUNE 30, 1987	218	113	34	365

Firefighters' Unified Retirement System established July 1, 1981

FIREFIGHTERS' UNIFIED RETIREMENT SYSTEM

Participating Members by City

Anaconda	10
Billings	95
Bozeman	23
Butte	37
*Glendive	23
Great Falls	71
Havre	18
Helena	32
Kalispell	21
*Lewistown	21
*Livingston	12
*Miles City	18
Missoula	58
Red Lodge	<u>3</u>
TOTAL	442

\*Participating members for Glendive, Lewistown, Livingston and Miles City includes any part-paid firefighters.

FIREFIGHTERS' UNIFIED RETIREMENT SYSTEM

CONTRIBUTION RATES

<u>Fiscal Year</u>	<u>Employee</u>	<u>Employer</u>	<u>State</u>
1982	6.00%	12.00%	12.00%
1983	6.00%	15.00%	15.00%
1984	6.00%	18.00%	18.00%
1985	6.00%	18.00%	18.00%
1986	6.00%	13.02%	22.98%
1987	6.00%	13.02%	22.98%

COMPARATIVE SUMMARY OF REVENUE BY SOURCE AND EXPENSES BY TYPE

REVENUES BY SOURCE

<u>Fiscal Year</u>	<u>Member Cont</u>	<u>Employer Cont</u>	<u>Investment Income</u>	<u>State Cont</u>	<u>Total</u>
1982	\$446,475	\$ 884,454	\$ 982,891	\$3,375,358	\$5,689,178
1983	470,055	1,169,642	1,075,488	1,987,917	4,703,102
1984	511,079	1,490,980	1,384,370	2,342,271	5,728,700
1985	520,534	1,549,402	1,651,912	2,431,330	6,153,178
1986	539,886	1,236,716	2,310,399	2,759,542	6,846,543
1987	553,959	1,210,874	2,001,595	3,033,477	6,799,905

EXPENSES BY TYPE

<u>Fiscal Year</u>	<u>Benefits</u>	<u>Refunds</u>	<u>Admin Expenses*</u>	<u>Other**</u>	<u>Total</u>
1982	\$2,545,689	\$23,115	\$16,331	\$ 4,497	\$2,589,632
1983	2,747,860	15,777	13,191	9,845	2,786,673
1984	2,996,403	48,592	18,788	(21,245)	3,042,538
1985	3,216,785	16,098	17,393	676,148	3,926,424
1986	3,484,636	32,681	20,924	(11,407)	3,526,834
1987	3,730,035	33,473	25,531	-0-	3,789,039

\*Includes Investment Expense

\*\*Includes Prior Year Adjustments

Firefighters' Unified Retirement System established July 1, 1981

FIREFIGHTERS' UNIFIED RETIREMENT SYSTEM

Additions to Net Assets Available for Benefits

<u>Fiscal Year</u>	<u>Revenues</u>	<u>Expenses</u>	<u>Annual Additions</u>	<u>Net Assets Available</u>
1982	\$5,689,178	\$2,589,632	\$3,099,546	\$10,406,326
1983	4,703,102	2,786,673	1,916,429	12,322,755
1984	5,728,700	3,042,538	2,686,162	15,008,917
1985	6,153,178	3,926,424	2,226,754	17,235,671
1986	6,846,543	3,526,834	3,319,709	20,555,380
1987	6,799,905	3,789,039	3,010,866	23,566,246

Comparative Summary of Net Assets Available for Benefits and

Total Actuarial Present Value of Total Benefits  
(in millions of dollars)

<u>Fiscal Year</u>	<u>Net Assets Available</u>	<u>Actuarial Present Value of Benefits*</u>	<u>Percentage</u>
1982	10.4	78.9	13.2
1984	15.0	87.0	17.2
1986	20.6	89.1	23.1

Looking at the amount of the actuarial present value of benefits can be misleading. Expressing net assets available for benefits as a percentage of the actuarial present value of benefits provides one indication of the extent to which a retirement system is funded. Analysis of this percentage over time indicates whether the system is becoming financially stronger or weaker, the greater this percentage, the stronger the system.

\*This system is valuated biennially.



VOLUNTEER FIREFIGHTERS' RETIREMENT SYSTEM\*

RETIRED MEMBERS AND BENEFIT RECIPIENTS

<u>PERIOD ENDED</u>	<u>RETIREMENT</u>	<u>SURVIVORS</u>	<u>TOTAL</u>
JUNE 30, 1979	218	4	222
JUNE 30, 1980	231	3	234
JUNE 30, 1981	244	1	245
JUNE 30, 1982	284	2	286
JUNE 30, 1983	312	2	314
JUNE 30, 1984	352	2	354
JUNE 30, 1985	373	4	377
JUNE 30, 1986	393	2	395
JUNE 30, 1987	422	0	422

\*(P.E.R.D. began administering the Volunteer Firemens' Compensation Act, July 1, 1983)

VOLUNTEER FIREFIGHTERS' RETIREMENT SYSTEM

COMPARATIVE SUMMARY OF REVENUE BY SOURCE AND EXPENSES BY TYPE

REVENUES BY SOURCE

<u>Fiscal Year</u>	<u>Investment Income</u>	<u>State Contributions</u>	<u>Total</u>
1984	\$465,458	\$338,742	\$ 804,200
1985	428,166	338,742	766,908
1986	471,176	500,000	971,176
1987	483,790	534,766	1,018,556

EXPENSES BY TYPE

<u>Fiscal Year</u>	<u>Benefits</u>	<u>Insurance Payments</u>	<u>Admin Expenses*</u>	<u>Other**</u>	<u>Total</u>
1984	\$401,008	\$18,225	\$ 6,939	\$(368,817)	\$ 57,355
1985	267,869	19,950	6,408	(691)	293,536
1986	525,851	20,700	7,477	(86,258)	467,770
1987	517,693	21,825	14,654	16,101	570,273

\*Includes Investment Expense

\*\*Includes Prior Year Adjustment to a full accrual accounting system

(PERD Began administering the Volunteer Firemens' Compensation Act, July 1, 1983.)

VOLUNTEER FIREFIGHTERS' RETIREMENT SYSTEM

Additions to Net Assets Available for Benefits

<u>Fiscal</u> <u>Year</u>	<u>Revenues</u>	<u>Expenses</u>	<u>Annual</u> <u>Additions</u>	<u>Net Assets</u> <u>Available</u>
1984	\$ 804,200	\$ 57,355	\$746,845	\$3,823,515
1985	766,908	293,536	473,372	4,296,887
1986	971,176	467,770	503,406	4,800,293
1987	1,018,556	570,273	448,283	5,248,576



# ACTUARIAL SECTION

FUNDING METHOD

ACTUARIAL ASSUMPTIONS

ANALYSIS OF VALUATION



## INTRODUCTION

An actuarial valuation for each of the retirement systems administered by the Public Employees' Retirement Division of the State of Montana has been completed as of July 1, 1986. This valuation was authorized by the Public Employees' Retirement Board under Title 19 M.C.A. The purpose of the valuation was to determine the financial position of each fund, the normal cost, and the unfunded accrued liability based upon present and prospective assets and liabilities of each fund as of July 1, 1986. Each retirement system is valuated biennially.

## Funding Method

The method of funding employed by each retirement system is commonly referred to as the entry age normal cost method. This method established a normal cost of each fund as well as an unfunded accrued liability. The normal cost is the level percentage of total salaries required to fund the benefits, assuming this percentage has been contributed since each member's entry into the fund.

The unfunded accrued liability represents the excess of the present value of total liabilities over the present assets of the fund and the present value of expected future contributions for the normal cost.

In order to maintain a fund on an actuarial sound basis, the rate of contribution should be such as to meet the normal cost in addition to making progress towards the amortization of the unfunded liability. The systems' actuary determined all of the retirement systems are funded on an actuarial sound basis.

The following schedule reports the amount of unfunded liability at June 30,

1986, for each retirement system:

	<u>Unfunded Liability at June 30, 1986</u>
Public Employees'	\$275,203,197
Municipal Police Officers'	34,759,407
Game Wardens'	3,046,933
Sheriffs'	-0-
Judges'	5,061,998
Highway Patrolmen's	20,900,452
Firefighters' Unified	49,126,785

#### ACTUARIAL ASSUMPTIONS

The assumptions shown below were based upon the past experience of the fund together with the projections as to future experience.

1. The mortality rates were set back one year to reflect increased life expectancy.
2. The disability rates for males and females are based upon rates published by the Railroad Retirement Board.
3. Withdrawal rates represent the net effect of the experience of each system including the termination of members, the reemployment of terminated members, and the purchase of credit for past service.
4. It is assumed that the investment earnings would be 8% compounded annually.
5. It is assumed that the system would incur no administrative expenses beyond those provided by the Social Security Division and the \$1 per member charge.
6. The rates of salary increase are based upon an underlying cost-of-living assumption of 6.5% per annum. Meritorious service and longevity increases were also taken into account.
7. It is assumed that all members terminating with less than five years of service would receive an immediate withdrawal of their member contributions with interest. It is further assumed that members with five or more years of service would select the most advantageous benefits under the given assumptions.



### ACTUARIAL MODIFICATIONS

The actuarial assumptions have been 8% for investment earnings and 6.5% for cost-of-living increases. These rates were based upon the projected average experience of the system during the lifetime of each member. The spread between these two rates of 1.5% has been the historical average over an extended period. To better reflect the anticipated cost-of-living adjustments in the near future, a select rate of 4% was assumed for each of the next 5 years. The ultimate rate after the 5-year period will continue at 6.5%.

The result of the change in the cost-of-living assumption was a reduction in the liability for active members, and a similar reduction in the present value of projected future salaries. The unfunded liability decreased substantially which resulted in a reduction in the required funding period.

A change has also been made in the method of funding the unfunded past service liability. An amortization schedule has been established which will amortize the liability as of July 1, 1984 over a 40-year period. Any actuarial gain or loss from this schedule is amortized over a 40-year period from the date of the occurrence.

The new amortization schedule will allow new liabilities determined from each valuation to be funded over a 40-year period. The funding period for past liabilities will decrease 2 years in each future biennial valuation.

## ANALYSIS OF VALUATION

### 1. PUBLIC EMPLOYEES' RETIREMENT SYSTEM

The actuarial valuation as of July 1, 1986 has determined that the percentage of each member's salary required to fund the benefits as they accrue in the future is 9.557%. The regular contribution rate of 12.417% allows 2.860% to be applied to the amortization of the unfunded liability. The valuation determined that 2.860% is sufficient to amortize the unfunded liability over a period of 28.24 years.

The period over which the regular contribution rate will amortize the unfunded liability has decreased from 36.58 years in 1984 to 28.24 years in 1986. Two factors contributed to the reduction:

- a. The assumption of future cost-of-living increases was modified for a select period of five years. As a result, the number of years required to fund the unfunded liability was substantially reduced.
- b. If the cost-of-living assumption had not changed, the funding period would have been expected to decrease 2 years. It in fact decreased 2.47 years; the additional .47 year was the result of actual experience of the system being more favorable than had been projected.

The total payroll is \$458 million which represents a 10.2% increase during the biennium. The number of members receiving benefits has increased to 8,406. Based upon benefits paid on July 1, 1986, the total annual benefit is \$36,482,000, which represents an increase of 25.7% during the biennium. The assets of the system have increased 28.5% during the biennium to a total value of \$559 million.

The regular contribution rates to the Public Employees' Retirement System is 12.417% of each active member's salary. This rate is comprised of

6.417% from the employer and 6% from each member.

The liabilities of the system have grown because of the increased membership, salaries, and benefits; the assets have grown as well. The net liabilities are being appropriately funded by the current contribution structure. The new process of identifying biennial liability changes and funding each of these over a 40-year period will provide better identification of the system's funding progress and future funding needs. The Public Employees' Retirement System is funded on an actuarial sound basis.

## 2. MUNICIPAL POLICE OFFICERS' RETIREMENT SYSTEM

The actuarial valuation as of July 1, 1986 has determined that the percentage of each police officer's salary required to fund the benefits as they accrue in the future is 21.16%. The applicable funding rate of 35.27% allows 14.11% of salary to be applied to the amortization of the unfunded liability. The valuation determined that 14.11% is sufficient to amortize the unfunded liability over a period of 33.60 years.

The period over which the applicable funding rate will amortize the unfunded liability has decreased from 35.92 years in 1984 to 33.60 years in 1986. The main reason for this reduction is that the assumption of future cost-of-living increases was modified for a select period of 5 years. As a result, the number of years required to fund the unfunded liability was reduced.

Supplemental benefits are provided to recipients who began receiving benefits prior to July 1, 1985. These supplements are paid by the state auditor out of insurance premium taxes. This valuation did not include the cost of these supplemental benefits.

The active membership increased by 1 member to 436 as of July 1, 1986. The annual payroll increased 11.7% to \$10,240,213. Annual benefits increased 17% with 369 members receiving annual payments. Based upon benefits paid July 1, 1986, the total annual benefit payout is \$3,491,579. The assets of the system on July 1, 1986 were \$22,354,564. This is an increase of 29.6% from the assets

of \$17,249,389 on July 1, 1984.

The regular contribution rate for funding the Municipal Police Officers' Retirement System is 35.27% which is comprised of a contribution of 13.02% of the member's salary from each city, 15.06% from the state, and the member's contribution of 6% of salary of each police officer hired prior to July 1, 1979 and 7.5% from each police officer hired on or after July 1, 1979.

The applicable contribution rate allows the system to meet its financial obligations and amortize the unfunded liability in 33.60 years. The new process of identifying biennial liability changes and funding each of these over a 40-year period will provide better identification of the system's funding progress and future funding needs. The Municipal Police Officers' Retirement System is funded on an actuarial sound basis.

### 3. GAME WARDENS' RETIREMENT SYSTEM

The actuarial valuation as of July 1, 1986 has determined that the percentage of each game warden's salary required to fund the benefits as they accrue in the future is 15.69%. The regular contribution rate of 25.25% allows 9.56% of salary to be applied to the amortization of the unfunded liability. The valuation determined that 9.56% is sufficient to amortize the unfunded liability over a period of 18.6 years.

The period over which the aggregate contribution rate will amortize the unfunded liability has increased from 15.5 years in 1984 to 18.6 years in 1986. Several factors have affected the number of years required to fund the liability:

- a. The total contribution to the system has decreased as a percentage of salary. All collections from fines and forfeited bonds are contributed to this system and this amount has decreased as a percentage of salary. The total percentage of salary available in 1984 was 27.29%. This has decreased to 25.25% in 1986.

b. The assumption of future cost-of-living increases was modified for a select period of 5 years. As a result, the number of years required to fund the unfunded liability has decreased from the period which would have otherwise been required.

The active membership remained constant at 85 from 1984 to 1986. The total payroll increased only 3.7% from an average salary in 1984 of \$24,437 to \$25,336 in 1986. The annual payroll of the membership on July 1, 1986 was \$2,153,565.

The number of members receiving benefits increased substantially from 37 to 44 resulting in an 18.9% increase. The average annual benefit increased 15% from \$7,770 in 1984 to \$8,939 in 1986. Based upon benefits paid on July 1, 1986, the total annual benefit payout is \$393,316.

The assets of the system on July 1, 1986 were \$7,090,998. This is an increase of 36.8% from the assets of \$5,300,272 on July 1, 1984.

The contribution required to fund the Game Warden's Retirement System is 25.25% of each member's salary. This rate is comprised of 7.9% from each member and 7.15% from the state. In addition, all collections from fines and forfeited bonds are contributed to the system.

The current structure allows the system to be adequately funded. However, the funding position may become weaker if the collections from fines and forfeited bonds continue to decline as a percentage of salary. The new process of identifying biennial liability changes and funding each system of these over a 40-year period will provide better identification of the system's funding progress and funding needs. The Game Wardens' Retirement System is funded on an actuarial sound basis.

#### 4. SHERIFFS' RETIREMENT SYSTEM

The actuarial valuation as of July 1, 1986 has determined that the percentage of each sheriff's salary required to fund the benefits as they accrue in the future is 11.13%. The system has no unfunded liability.

The percentage of salary required to fund future accrued benefits has decreased from 13.31% in 1984 to 11.13% in 1986. This decrease in the required contribution was attributable to favorable experience as well as a change in the cost-of-living assumption. The projected cost-of-living increase was modified for a select period of 5 years which resulted in a smaller funding requirement. The active membership increased .7% from 537 in 1984 to 541 in 1986. The average salary increased from \$19,528 to \$21,275. The annual payroll based upon membership as of July 1, 1986 is \$11,509,790 which represented an 8.6% increase from 1984.

The number of retirees increased by 7 during the biennium from 52 to 59. The average annual benefit increased from \$4,395 to \$5,287 for a 20.3% increase. Based upon benefits paid on July 1, 1986, the total annual benefit payout is \$311,955 representing a 36.50% increase.

The assets of the system grew 47.2% from \$13,230,243 in 1984 to \$19,480,636 in 1986.

The contribution rate to fund the Sheriffs' Retirement System is 14.67% of each active member's salary. This rate is comprised of 7.6% of salary from the county and 7% from each member.

The system has no unfunded past service liability, and the contribution rate is sufficient to fund benefits as they accrue in the future. The Sheriffs' Retirement System is sufficient to fund benefits as they Retirement System is funded on an actuarial sound basis.

#### 5. JUDGES' RETIREMENT SYSTEM

The actuarial valuation as of July 1, 1986 has determined that the percentage of each judge's salary required to fund the benefits as they accrue in the future is 36.97%. An additional percentage of 9.41% is required to amortize the unfunded past service liability over a period of 40 years. The total recommended contribution rate is 46.38%. The current statutory contribution rate is 44%, which is expected to amortize the unfunded past

service liability over 50 years.

The recommended rate of 46.38% represents a decrease of 3.14% over the 1984 recommended rate of 49.52%. This decrease resulted from:

- a. The cost-of-living assumption was modified to reflect a lower rate for a 5-year period. This change resulted in a decrease in the required funding rate of 1.28%.
- b. The experience of the system was more favorable than had been anticipated. The favorable experience was attributable to several factors including a small average salary increase and no increase in the number of benefit recipients. The result of the favorable experience was a decrease in the required funding rate of 1.86%.

The number of active members increased from 41 to 42; because 3 people were placed on vested inactive status and 4 new judges were added to the system. The average salary increased 4.8% from \$47,023 in 1984 to \$49,274 in 1986. The annual payroll based on members as of July 1, 1986 is \$2,069,519.

The number of members receiving benefits remained constant at 21. There was a slight increase of 3.6% in the average annual benefit which is now \$20,423. Based upon benefits paid on July 1, 1986, the annual benefits provided are \$408,454.

The assets had a substantial growth of 40% from \$5,549,146 in 1984 to \$7,769,510 in 1986.

The total contribution rate for funding the Judges' Retirement System was assumed to be 44.61% of each judge's salary. This rate is comprised of 6% from the state, 31% from the district court fees, and 6% from each judge elected prior to July 1, 1983 and 7.0% from each judge elected on or after July 1, 1983. This rate is a weighted rate which is based upon the expected future contributions of active members who are currently employed as well as future members. This rate will gradually increase in future years until reaching an ultimate rate of 45.0%.

The district court fees were insufficient in 1985 and 1986 to provide the full 31% of salaries. Our valuation assumed that the full 31% will be available in future years.

The applicable contribution rate of 44.61% is sufficient to amortize the unfunded liability over 49.61 years. Because of favorable experience and a change in the cost-of-living assumption, the system is in a stronger financial position than was reflected in the 1984 valuation. The new process of identifying biennial liability changes and funding each of these over a 40-year period will provide better identification of the system's funding progress and future funding needs. The Judges' Retirement system is funded on an actuarial sound basis.

#### 6. HIGHWAY PATROLMEN'S RETIREMENT SYSTEM

The actuarial valuation as of July 1, 1986 has determined that the percentage of each member's salary required to fund the benefits as they accrue in the future is 21.29%. The aggregate contribution rate of 36.50% allows 15.21% to be applied to the amortization of the unfunded past service liability. This percentage is sufficient to amortize the unfunded past service liability over a period of 37.29 years.

The period over which the aggregate contribution rate will amortize the unfunded liability has decreased from 49.81 years in 1984 to 37.29 years in 1986. Factors which have influenced the number of years required to fund the liability include:

- a. The total contribution to the system, as a percentage of salary, has increased from 23.07% of each active patrolman's salary to 36.50%. This increase was required to fund the additional benefits which are now available under the Highway Patrolmen's Retirement System. The additional benefit includes survivorship benefits and cost-of-living adjustments based upon the salary of a probationary patrolman. The total contribution rate of 36.50% was sufficient to fund the additional benefit and amortize the



unfunded past service liability over a period of approximately 40 years.

- b. The assumption of future cost-of-living increases was modified for a select period of 5 years. As a result, the number of years required to fund the unfunded liability has decreased from the period which would have otherwise been required.

The active membership increased slightly from 197 in 1984 to 201 in 1986. The annual payroll based on membership as of July 1, 1986 increased 7.1% to \$5,274,317. The average salary increased from \$25,006 in 1984 to \$26,240 in 1986 for an increase of 4.9%.

The number of members receiving benefits increased from 131 in 1984 to 145 in 1986, while the average annual benefit increased from \$6,294 to \$7,345. Based upon benefits paid on July 1, 1986, the total annual benefit payout is \$1,065,064, representing an increase of 29.2% since 1984.

The system's assets grew 37.90% from \$11,506,051 in 1984 to \$15,865,541 at July 1, 1986.

The aggregate contribution rate to fund the Highway Patrolmen's Retirement is 36.50% of each active member's salary. This rate is comprised of 7.59% from each member and 1/3 of the driver's license fees collected by the state which represented 28.91% of the active patrolmen's salaries.

The liabilities of the system have increased approximately 68% because of the substantial improvement in benefits. The new process of identifying biennial liability changes and funding each of these over a 40-year period will provide better identification of the system's funding progress and future funding needs. The Highway Patrolmen's Retirement System is funded on an actuarial sound basis.

#### 7. FIREFIGHTERS' UNIFIED RETIREMENT SYSTEM

The actuarial valuation as of July 1, 1986 has determined that the percentage of each member's salary required to fund the benefits as they accrue in the future is 22.02%. The regular contribution rate of 42.00%

allows 19.98% to be applied to the amortization of the unfunded past service liability. This percentage is sufficient to amortize the unfunded past service liability over a period of 40.23 years.

The period over which the statutory contribution rate will amortize the unfunded liability has decreased from 42.29 years in 1984 to 40.23 years in 1986. The following two factors affected the funding period:

- a. The assumption of future cost-of-living increases was modified for a select period of 5 years. As a result, the number of years required to fund the unfunded liability was substantially reduced.
- b. The actual experience of the system was somewhat less favorable than had been projected. This resulted in a slight increase in the number of years required to fund the system, but the change in the cost-of-living assumption more than offset this increase. Supplemental benefits are provided to recipients who were employed prior to July 1, 1981. The cost of these supplements for recipients who began receiving benefits prior to July 1, 1973 are paid by the state auditor from the state special reserve fund. This valuation did not include the cost of supplemental benefits provided by the state auditor.

The active membership increased 2% from 395 members in 1984 to 403 in 1986. The average annual salary increased 8.3% from \$20,435 to \$22,130. The annual payroll of the membership on July 1, 1986 was \$8,918,528 which represented an increase in the biennium of 10.5%.

The number of members receiving benefits increased from 342 to 357 during the biennium and the annual average benefit increased 9.5% from \$9,040 to \$9,903. Based upon the benefits paid on July 1, 1986, the total annual benefit payout is \$3,535,407.

The assets grew 36.5% during the biennium to the total value of \$20,555,380 on July 1, 1986.

The contribution rate to fund the Firefighters' Unified Retirement System

is 42.00% of each active firefighter's salary. This rate is comprised of 22.98% from the state, 13.02% from each city, and 6% from each member.

The funding position of the system has improved during the biennium, mainly due to the change in the actuarial assumption on cost-of-living increases. The new process of identifying biennial liability changes and funding each of these over a 40-year period will provide better identification of the system's funding progress and future funding needs. The Firefighters' Unified Retirement System is funded on an actuarial sound basis.





200 copies of this public document were published at an estimated cost of \$3.82 per copy, for a total cost of \$765.00, which includes \$665.00 for printing and \$100.00 for distribution.